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NOTES ON A COLLECTION OF REPTILES FROM BOQUETE,  
PANAMA, WITH THE DESCRIPTION OF A NEW  
SPECIES OF HYDROMORPHUS\*

BY

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Through the kindness of Mr. and Mrs. Robert Terry, of Boquete, Chiriqui, Panama, the writer was enabled to spend the summer of 1939 as their guest and enjoyed their hospitality and assistance for a period of four months in that most interesting region. The actual time spent in the field was from May 11th to September 15th.

The rainy season of 1939 proved to be an extremely dry one. This no doubt modified conditions considerably, but apparently did not greatly affect reptile collecting, although it may have accounted for the scarcity of some of the species of lizards. However it must have had a considerable influence on animal life in general. Up to May 17th there had been only one light shower, and on the 22nd the first, real tropical downpour occurred. These rains did not continue, and up to the middle of August the country was badly in need of rain. The beginning of September saw a change, but even then the real tropical rains were not in evidence.

The collection of snakes considered in the present paper includes 20 genera, 21 species, and 220 specimens; the lizards 7 genera, 11 species, and 447 specimens. Of the snakes *Hydromorphus dunni* is a new species, *Ninia psephota* new to Panama, and *Spilotes p. pullatus*, *Sibon sibon* and *Leptophis o. occidentalis* new records for Boquete, and altitude records for western Panama. Of the lizards

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*Norops auratus* is an altitude record for western Panama and new record for Boquete.

My thanks are due Dr. Emmett R. Dunn for assistance in making identifications, and for much information from his critical notes concerning Panamanian reptiles, and to Plinio Ruiz, my invaluable native companion, to whom I am indebted for much able field assistance.

## LIZARDS

### *Anolis copei* Bocourt

A series of 54 males (C.A.S. Nos. 79036-79089) and 68 females (C.A.S. Nos. 79090-79157) showed this to be, next to *Anolis poly-lepis*, the most abundant anole met with. It was generally found in the larger and higher trees, but occasionally on fence posts, and once or twice on the ground. While most frequently seen on the tree trunks it was often discovered on fairly high limbs, crouching down as if to avoid detection. In living specimens the ground color was usually uniform light green, but variations occasionally occurred. No. 79090, a female, was uniform light green, shaded with black; belly greenish-white. The posterior two-thirds of the tail was black. No. 79091, a female, had a ground color of light green, with occasional black blotches. The top of the head was black. No. 79036, a male, was light green, with heavy black cross-bars both on body and limbs; top of head uniform black; belly whitish, with longitudinal black lines. The rather large dewlap of the males had a ground color of orange, with rows of bluish scales. The entire series of males, in life, had a dewlap as described above, while in females the ground color was light blue, with rows of black scales. Color changes took place so quickly that a bright green lizard shot from the limb of a tree would be reddish-brown on striking the ground.

### *Anolis intermedius* Peters

This species was found rather sparingly in the vicinity of Boquete. Its habitat seemed to be strictly confined to the coffee trees, and the entire series of eight specimens (C.A.S. Nos. 79367-79374) was taken from the older trees on which the bark was mottled silver-gray and brown. The lizard matched this background closely in color and was difficult to detect. The dewlap, in life, is a rich blood-orange.

### *Anolis microtus* Cope

A single juvenile specimen (C.A.S. No. 79598) was shot off the side of a log cabin in a partly grown-over clearing on the north slope of the Volcan Chiriqui, at an approximate elevation of 7,000

feet. In life the ground color is grayish, the body and tail with heavy black cross-bands, which completely encircle the latter; top of limbs cross-banded. A white line extends from under the front of the eye to the shoulder, where it broadens into a patch; undersurface whitish, the chin with dark grayish spots along the sides. The dewlap is whitish, with straw-colored rows of scales.

### *Anolis pachypus* Cope

A stop of three days in the rain forest on the north slope of the Volcan Chiriqui at an approximate elevation of 7,000 feet resulted in the finding of only two specimens of this species (C.A.S. Nos. 79596-79597) a male and a female. Both were found while cutting the foliage from around the tops of dead stumps. In life the ground color is greenish, with faint traces of black cross-bars on limbs and tail; sides of head black; undersurface whitish. The throat of the female is prominently spotted with black, while the markings of the male are more obscure. The black coloring on the head of the male extends below the lower labials, giving the throat a black border. Two large black patches back of the fore limbs of the female are absent in the male. The dewlap of the male is a rich blood-red, with straw-colored rows of scales. The base of the tail is greatly enlarged.

### *Anolis polylepis* Peters

This was the most abundant lizard about Boquete, where a series of 209 specimens (C.A.S. Nos. 79158-79366) was taken. One specimen (C.A.S. No. 79595) was collected on the south slope of the Volcan Chiriqui at an approximate elevation of 6,500 feet. No habitat preferences were shown, it being found commonly on fence posts, coffee trees, and foliage in general. In life the ground color is bronze, occasionally with a few black dorsal spots, the females sometimes having a vertebral stripe; undersurface whitish. The dewlap is orange. The vertebral series of enlarged scales varies in size, but is usually quite prominent, being obscure in only three or four individuals of the entire series.

### *Norops auratus* Daudin

Found rather sparingly on a plateau above the floor of the Caldera Valley at an elevation of approximately 4,000 feet. Nine specimens (C.A.S. Nos. 79375-79383) were taken in the region south of Boquete. It is apparently a terrestrial species as it was found only on the ground sunning itself on the tops of small boulders. The dorsal coloring, in life, is bronze. A dark band extends along the sides of the body. The undersurface is yellowish and the dewlap dark blue.

**Basiliscus basiliscus** (Linnaeus)

A common species along the Caldera River, where eight males (C.A.S. Nos. 79388-79395), six females (C.A.S. Nos. 79396-79401) and four juveniles (C.A.S. Nos. 79384-79387) were taken. These rather striking lizards were usually found in rock walls close to the river bank, or on boulders in the river. Their extreme shyness is no doubt due to the fact that the natives are continually shooting at them with slingshots, an effective weapon in the hands of any Panamanian boy.

**Sceloporus formosus malachiticus** Cope

This lizard was not found in the Caldera Valley proper, and apparently was confined to an elevation some 800 to 1,000 feet higher in the mountainous areas, where it was fairly common in certain parts, forty specimens (C.A.S. Nos. 79402-79431) having been taken. It was usually found on tree trunks, fallen logs, fences, and rocky situations along the mountain trails. Males have the characteristic metallic-green, dorsal coloring and black collar band. Females are much more somber and show considerable black spotting on the dorsal region. Femoral pores in fifteen males vary from 13 to 17, and in ten females from 12 to 17.

**Gerrhonotus monticola** Cope

Three days were spent from August 10th to 12th inclusive in a locality rarely visited by herpetologists, the crater of the Volcan Chiriqui, the floor of which is estimated to be 10,000 feet above sea-level. Here 22 specimens (C.A.S. Nos. 79599-79620) of this interesting alligator lizard were collected. It is of particular interest on account of the wide difference in the coloration of the sexes. Cope described a female in 1877, and in 1907 Stejneger described a male as *Gerrhonotus alfaroi*. The color description of a living adult male and female given below shows that the sexes probably differ more in coloration than any other species of the genus. The series at hand shows little if any variation in squamation.

Male—Dorsal and lateral surfaces metallic-black, profusely speckled with minute spots of yellow; undersurface of tail and body lemon-yellow spotted with black; throat and chin greenish-blue.

Female—Dorsal and lateral surfaces chestnut-brown, spotted with black; a dorsal line of black extending from the base of the head well down on the tail; a lateral line of black, bordered above by one of yellowish-white, extending along the body and tail; undersurface of body and tail dark salmon without spots; throat and chin greenish-blue.

Alligator lizards were found to be scattered over the entire crater floor. They usually occurred in the patches of dry grass, hiding close down by the roots, but one short interval of sunshine brought them out of hiding, and five specimens were secured in the open, close to cover. Two were found under the ice-cold, wet moss and earth on the north wall of the crater about four feet above the ground. In each case a salamander (*Oedipus subpalmatus*) was found coiled up with the lizard under the same covering. Unfortunately most of the time the crater was covered by clouds, making the temperature cool, and only at short intervals, when the sky cleared and there was some vestige of warmth and direct sunlight, did reptile life become apparent. Spiders were found in countless numbers in the dry grass and no doubt formed the chief food supply of the lizards.

#### ***Ameiva quadrilineata* (Hallowell)**

This species, found only on the floor of the Caldera Valley, was by no means abundant, only eighteen specimens (C.A.S. Nos. 79432-79449) having been taken. Its usual habitat is along trails, roads and fences which have a sufficient growth of underbrush to furnish a safe retreat. The dorsal surface is olive-gray, mottled with black. Two lateral stripes of white bordering a black band are distinct throughout the series. The undersurfaces are uniform greenish-blue.

#### ***Mabuya mabuya mabuya* (Lacépède)**

Seven of these rather secretive skinks (C.A.S. Nos. 79450-79456) were found about old logs and stumps in open pastures. All have four supraoculars and have the supranasals in contact. In two individuals (Nos. 79451-79452) the parietals are not in contact. In Nos. 79451 and 79454 the prefrontals meet in a point, complete separation takes place in the remainder of the series. The dorsal coloration is dark brown, heavily spotted with black; a heavy black lateral band is bordered below by a prominent white line, while above a narrow one may be very obscure or absent. Undersurfaces are whitish.



## SNAKES

*Constrictor constrictor imperator* (Daudin)

Rare in the vicinity of Boquete only a single specimen, a male (C.A.S. No. 78816) having been taken. Owing to the poor condition and size (six feet three inches) of the snake the head only was preserved for the locality record. Upper labials are 21-22, lower labials 23-24.

*Ninia maculata* (Peters)

Moderately common under old logs, bark and general debris in the cafetals. The color is somewhat variable. In life the dorsal region may be reddish or grayish, with cross-bands of black. These may either meet or alternate on the vertebral line. The undersurface is whitish, mottled or dotted with square markings of black, and occasionally with a median, rough-edged, black line down the center of the gastrosteges.

All have 19 scale rows, anal single, preoculars 1-1, postoculars 2-2, loreal absent, temporals 1+2-1+2.

Sexes and variations in scale counts are as follows:

No.	Sex	Gastrosteges	Urosteges	Supralabials	Infralabials
78817	.....	137	58c	7-7	7-7
78818	♀	139	59c	7-7	7-7
78819	♀	146	57c	7-7	7-7
78820	.....	145	57c	7-7	7-7
78821	.....	141	60c	7-7	7-7
78822	.....	140	52c	7-7	7-7
78823	♀	136	52c	7-7	7-7
78824	♀	139	55c	7-7	8-8
78825	♀	141	63c	7-7	7-7
78826	♀	145	53c	8-7	7-7
78827	♀	145	57c	8-7	7-7
78828	♀	146	55c	7-7	7-7
78829	♀	138	61c	7-7	7-7
78830	♀	138	60c	7-7	7-7
78831	♀	143	50c	7-7	7-7
78832	♀	141	53c	7-8	7-7
78833	♂	141	62c	7-7	7-7
78834	♀	137	50c	7-7	7-7
78835	♀	141	54c	7-7	7-7
78836	♂	145	61c	7-7	7-7
78837	♂	141	57c	7-7	7-7
78838	♀	143	55c	7-7	7-7
78839	♀	143	59c	7-7	7-7
78840	♀	145	55c	7-7	7-7
79302	.....	142	52c	7-7	7-7

*Ninia psephota* (Cope)

A common species under debris in the cafetals, and occasionally found on open trails. It apparently feeds largely on insects as the stomachs of those examined contained a considerable quantity of beetle wingcovers.

In life the dorsal coloration is black; undersurface a tessellated pattern of black and coral-pink. In alcoholic specimens the pink coloration is entirely lost and changes to a light straw color.

In a series of thirty-one specimens all have 17 scale rows, anal single, supralabials 6-6, infralabials 6-6, preoculars 1-1, postoculars 2-2, with the exception of No. 78871 in which they are single, loreal absent.

Sexes and variations in scale counts are as follows:

No.	Sex	Gastro- steges	Uro- steges	Temporals
78841	♂	147	73c	2+2-2+2
78842	♀	147	64c	1+2-1+2
78843	♂	151	72c	1+2-1+2
78844	♂	...	71c	1+2-1+2
78845	♂	148	70c	1+1-1+1
78846	♂	148	66c	1+2-1+2
78847	♀	151	64c	1+1-1+1
78848	♀	147	58c	1+2-1+2
78849	♀	150	64c	1+1-1+1
78850	♀	149	65c	1+1-1+1
78851	♂	152	59+	1+1-1+2
78852	♀	139	51c	1+1-1+1
78853	♂	150	72c	1+1-1+1
78854	♂	150	67c	2+2-2+2
78855	♀	153	64c	1+2-1+2
78856	♀	146	70c	1+1-1+1
78857	♀	152	62c	1+2-1+2
78858	♀	147	55c	1+2-1+2
78859	♀	148	56c	1+1-1+1
78860	♀	145	63c	1+2-1+2
78861	♀	150	65c	1+1-1+1
78862	♂	153	71c	1+2-1+2
78863	♂	153	63c	1+1-1+1
78864	♀	148	61c	1+1-1+1
78865	♀	147	65c	1+2-1+2
78866	♂	152	64+	1+2-1+2
78867	♀	152	63+	1+2-1+1
78868	♀	148	64c	1+1-1+1
78869	♀	...	62c	1+2-1+2
78870	♂	147	67c	1+1-1+1
78871	♂	147	68c	1+1-1+1

*Dryadophis boddaertii alternatus* (Bocourt)

This was by far the most common species seen in the open about Boquete. It proved to be extremely wary, and was usually found

along fences and in rocky situations in the vicinity of heavy cover, into which it disappeared, seldom allowing a close approach. On examining the stomach of a male (No. 78889) it was found to contain a young individual of the same species over fourteen inches in length.

In life the dorsal coloring is light brown, the first, second, fourth and fifth scale rows being of a much lighter shade and forming lateral stripes. The third scale row is light brown, bordered above and below by a narrow black line. Young individuals are dark brown, with whitish cross-bands two or two and a half scales in width; undersurface whitish, the throat being tessellated with black.

All have 17 scale rows, anal divided, preoculars 1-1, postoculars 2-2, loreal 1-1.

Sexes and variations in scale counts are as follows:

No.	Sex	Gastro- steiges	Uro- steiges	Supra- labials	Infra- labials	Temporals
78872	♀	181	90+	8-9	10-10	2+2-2+2
78873	♀	173	50+	9-9	10-10	2+2-2+2
78874	♂	176	101c	9-9	10-10	1+2-2+2
78875	♂	172	43+	8-9	8-8	1+1-1+2
78876	♂	173	72+	8-9	10-10	2+2-2+2
78877	♂	171	100c	9-9	10-10	2+2-2+2
78878	♀	187	100c	9-9	10-10	2+2-2+2
78879	♂	179	107c	9-9	10-10	2+2-2+2
78880	♀	183	102c	8-9	10-9	2+2-1+2
78881	♀	183	100+	9-9	10-10	2+2-2+2
78882	♀	182	89+	9-9	11-10	2+2-2+2
78883	♀	185	103+	9-9	10-10	2+2-1+2
78884	♀	184	95c	9-9	10-10	2+2-2+2
78885	♂	175	91+	8-8	9-10	2+2-2+2
78886	♂	174	101c	9-9	10-10	2+2-2+2
78887	♂	176	104c	9-9	9-9	2+2-2+2
78888	♂	175	100+	9-9	10-10	2+1-2+2
78889	♂	178	103c	9-9	10-10	2+2-2+2
78890	♀	188	78+	9-9	10-10	1+2-1+2
78891	♀	183	96c	9-9	10-10	2+2-2+2
78892	♀	183	104c	10-9	10-10	2+2-2+2
78893	♂	171	105c	9-9	10-10	1+2-1+2
78894	♀	185	74+	9-9	10-10	2+2-1+2
78895	♀	188	103c	8-8	10-10	1+2-1+2

### *Dendrophidion paucicarinatus* (Cope)

A rare species apparently confined to the forested country containing clearings for coffee growing. The five specimens taken were found in heavy undergrowth along trails in the mountainous districts above the floor of the Caldera Valley.

In life the dorsal coloration is uniform brown; undersurface of



body and tail yellowish, the posterior edge of each gastrostege and urostege with a narrow border of black.

Scale counts are as follows:

No.	Sex	Scale Rows	Gastro-steges	Uro-steges	Anal	Supra-labials	Infra-labials	Pre-oculars	Post-oculars	Loreal	Temporals
78896	♀	15	187	131c	÷	9-9	10-10	1-1	2-2	1-1	2+2-2+2
78897	♂	17	184	67c	÷	9-9	10-10	1-1	2-2	1-1	2+2-2+2
78898	♀	17	182	45+	÷	9-9	10-10	1-1	2-2	1-1	2+2-2+2
78899	♀	17	187	129+	÷	9-9	11-11	1-1	2-2	1-1	2+2-2+2
78900	♀	17	182	132+	÷	9-9	11-11	1-1	2-2	1-1	2+2-2+2

#### *Spilotes pullatus pullatus* (Linnaeus)

Four specimens were taken along the banks of the Caldera River. No. 79647 was found stretched along a dead limb projecting over the water, and about ten feet above the surface. It was discovered by a native when he observed a bird about to alight upon the limb. The bird suddenly flew off with a loud cry, thus attracting the attention of the native.

A male (C.A.S. No. 79647) was colored in life as follows: dorsal region black, with a few small straw-colored spots; top of head brownish, with black sutures between the plates and a black band across the posterior edge of the parietals, extending over the upper labials; undersurface anteriorly yellowish, with black markings; posteriorly black; undersurface of tail black.

Scale counts are as follows:

No.	Sex	Scale Rows	Gastro-steges	Uro-steges	Anal	Supra-labials	Infra-labials	Pre-oculars	Post-oculars	Loreal	Temporals
78901	♀	16	220	72+	1	7-7	8-8	1-1	2-2	1-1	1-1
78902	♀	14	221	122c	1	6-7	8-9	1-1	2-2	1-1	1-1
78903	♀	16	222	111+	1	7-7	9-8	1-1	2-2	1-1	1-1
79647	♂	16	228	131c	1	7-7	9-8	1-1	2-2	1-1	1-1

**Drymarchon corais melanurus** (Duméril and Bibron)

Apparently a rare species in the vicinity of Boquete. A large female, the only specimen taken, was found about six feet above ground in a coffee tree as it was about to rob a wren's nest. On being discovered the snake immediately dropped to the ground and made for cover, where it was captured with some difficulty. This specimen (C.A.S. No. 78904) has scales in 17 rows, gastrosteges 210, urosteges 75c, anal single, supralabials 8-8, infralabials 8-8, pre-oculars 1-1, postoculars 2-2, loreal 1-1, temporals 2+2-2+2.

**Chironius carinatus** (Linnaeus)

This species was moderately rare in the pastures and open country on the floor of the Caldera Valley. None was found in the mountainous districts. It was always close to water and would not allow a near approach, showing the speed of a racer when making for cover. When approaching this species in the field the observer is at once attracted by the unusually large eye.

In life the dorsal coloration is uniform dark green; undersurface lighter green, with throat and anterior gastrosteges yellowish.

Scale counts are as follows:

No.	Sex	Scale Rows	Gastrosteges	Urosteges	Anal	Supralabials	Infralabials	Pre-oculars	Post-oculars	Loreal	Temporals
78905	♀	12	155	148c	÷	8-9	10-11	1-1	2-2	1-1	1+2-1+2
78906	♂	12	146	144+	÷	9-9	11-x	1-1	2-2	1-1	1+2-1+2
78907	...	12	152	139+	÷	9-8	9-10	1-1	2-2	1-1	1+2-1+2
78908	♀	12	152	144+	÷	9-9	10-11	1-1	2-2	1-1	1+2-1+2
78909	♂	12	147	29+	÷	9-9	11-10	1-1	2-2	1-1	1+2-1+2
78910	♀	12	151	128+	÷	9-9	10-10	1-1	2-2	1-1	1+2-1+2

**Leptophis occidentalis occidentalis** (Günther)

One of the commoner species about Boquete, where thirteen specimens were taken. Strictly confined to the heavy-growth areas in close proximity to water it was found on the floor of the Caldera Valley, islets in the Caldera River, and along the edge of streams in the mountainous sections above the valley floor. This snake is striking in coloration. The body is uniform green, so intense that it is conspicuous even against the luxuriant tropical foliage.

A male (C.A.S. No. 78911) was colored in life as follows: dorsal surface uniform light green; a black band from the corner of the eye to the corner of the jaw; undersurface uniform green, but of a lighter shade than the dorsal coloration.

Scale counts are as follows:

No.	Sex	Scale Rows	Gastro-steges	Uro-steges	Anal	Supra-labials	Infra-labials	Pre-oculars	Post-oculars	Loreal	Temporals
78911	♂	15	159	91+	÷	10-9	11-11	2-2	2-2	abs.	1+2-1+2
78912	♀	15	165	167c	÷	9-9	9-11	1-1	2-2	"	1+2-1+2
78913	♀	15	167	74+	÷	9-9	11-11	1-1	2-2	"	1+2-1+2
78914	♀	15	163	99+	÷	9-10	10-10	1-1	2-2	"	1+1-1+1
78915	♂	15	162	135+	÷	8-8	9-9	1-1	2-2	"	1+1-1+1
78916	♂	15	161	131+	÷	9-9	9-10	1-1	2-2	"	1+2-1+2
78917	♂	15	160	157c	÷	9-9	11-11	2-1	2-2	"	1+2-1+1
78918	♀	15	164	152+	÷	8-8	10-11	1-1	2-2	"	1+1-1+2
78919	♀	15	170	167c	÷	10-9	10-10	1-1	2-2	"	1+2-1+2
78920	♂	15	165	149+	÷	9-9	11-11	1-1	2-2	"	1+2-1+2
78921	♀	15	160	152+	÷	8-8	10-9	1-1	2-2	"	1+1-1+2
79034	♀	15	163	120+	÷	9-9	11-11	1-1	2-2	"	1+2-1+2
79035	♂	15	168	118+	÷	10-9	11-11	1-1	2-2	"	1+2-1+2

*Leimadophis taeniurus juvenalis* Dunn

This strikingly colored snake was not confined to any particular type of country, but was usually found on open roads and amongst debris in the cafetals. It proved to be one of the commoner species, fifteen specimens having been collected. A majority of the stomachs contained small tadpoles.

In life the dorsal surface appeared as metallic bronze, the anterior portion of the body showing each scale with a red border at the top. The throat is yellow. The undersurface is whitish anteriorly and red posteriorly, with numerous black spots. The undersurface of the tail is red. The stretched skin of the snake will show a ground color of red, with greenish-bronze cross-bands.

Scale counts are as follows:

No.	Sex	Scale Rows	Gastro-steges	Uro-steges	Anal	Supra-labials	Infra-labials	Pre-oculars	Post-oculars	Loreal	Temporals
78922	♂	17	140	58c	÷	8-8	10-10	1-1	2-2	1-1	1+2-1+2
78923	♀	17	136	61c	÷	8-8	9-9	1-1	2-2	1-1	1+2-1+2
78924	♂	17	140	55c	÷	8-8	10-10	1-1	2-2	1-1	1+2-1+2
78925	♀	17	142	57c	÷	8-8	10-10	1-1	2-2	1-1	1+2-1+2
78926	♀	17	138	53c	÷	8-8	10-10	1-1	2-2	1-1	1+2-1+2
78927	♂	17	140	56c	÷	x-8	10-10	x-1	x-x	x-1	x-1+2
78928	♂	17	141	41+	÷	8-8	10-10	1-1	2-2	1-1	1+2-1+2
78929	♂	17	142	65c	÷	8-8	10-10	1-1	2-2	1-1	1+2-1+2
78930	♀	17	137	58c	÷	x-x	x-x	1-x	2-x	1-x	x-x
78931	♀	17	141	58c	÷	8-8	10-10	1-1	2-2	1-1	1+2-1+2
78932	♀	17	141	57c	÷	x-8	x-10	1-1	2-x	1-1	x-x
78933	♂	17	142	53c	÷	8-8	10-10	1-1	2-2	1-1	1+2-1+2
78934	♂	17	143	55c	÷	8-8	9-9	1-1	2-2	1-1	1+2-1+2
78935	♂	17	142	59c	÷	8-8	x-10	1-1	2-2	1-1	1+2-1+2
78936	juv.	17	132	59c	÷	8-8	10-10	1-1	2-2	1-1	1+2-1+2

### *Lampropeltis triangulum gaigae* Dunn

A rare species about Boquete, only a single specimen being taken during four months in the field. This is a juvenile showing the red, white, and black banded type of coloration, the adults, as stated by Dunn<sup>1</sup>, being black. On the dorsal surface the red bands are 4-4½ scales wide, white bands 2-2½ scales wide, and the red bands 13-13½ scales wide. The top of the head is black, with a white band across the snout.

Discovered on a main road on the outskirts of Boquete.

### *Trimetopon slevini* Dunn

A male, No. 78938, taken near Boquete at an elevation of 4,000 feet has the following scale counts: scale rows 17, gastrosteges 155, urosteges 58, anal divided, supralabials 7-7, infralabials 8-8, preoculars 1-1, postoculars 2-2, loreal 1-1, temporals 1-1.

### *Hydromorphus dunnii* Slevin, new species

A specimen of *Hydromorphus* differs so markedly from the two recorded specimens of *Hydromorphus concolor*, the only species heretofore known in the genus, that it is here described as new.

*Description:* Gastrosteges 164; urosteges 52c; scales in 15-15-13 rows, smooth, without pits; anal 2; supralabials 6-6; infralabials 8-8. On the right side of the head the loreal enters the eye under a small upper preocular, while on the left side it is entirely separated by two preoculars. The postoculars are 2-2; temporals 1+2-1+2; prefrontals 3, the median one being small; internasals 2; 3 infralabials in contact with anterior chinshields; nasal directed upward in a single plate.

The dorsal scales of the anal region are occupied by white keels or tubercles, the largest on the first scale row and extending for fourteen scales anterior and four posterior to the vent. On the fourth row they are on nine scales anterior to the vent.

Color above uniform olive; undersurface of body yellowish, with dark gray spotting on the outer edges of the gastrosteges; undersurface of tail grayish.

*Type:* No. 78939 Mus. Calif. Acad. Sci., **Vicinity North of Boquete, Chiriqui Province, Panama.** Collected by Joseph R. Slevin, July 30, 1939. Named for Dr. Emmett R. Dunn, who is so intimately connected with Central American herpetology.

### *Geophis brachycephala* (Cope)

By far the most abundant species met with in the vicinity of Boquet, where 63 specimens were found in the cafetals as they were being cleared previous to coffee picking. Stomach contents showed beetle remains.

<sup>1</sup>Occ. Papers Museum Zool. Univ. Mich., No. 353, p. 9, April 28, 1937.

In the present series there are four types of coloration. While all have a dorsal ground color of light to dark slate and whitish under-surfaces, the following variations are found:

- 36 specimens show reddish spots, blotches or short stripes,
- 23 specimens are uniform in color,
- 2 specimens show a white collar and no lateral spots,
- 2 specimens show a white collar and red lateral spots.

With the exception of a damaged specimen, which was not counted, all have scales in 15 rows, anal single, supralabials 6-6, preoculars 1-1, postoculars 2-2, temporals 1-1, loreal absent.

Sexes and variations in scale counts are as follows:

No.	Sex	Gastro- steges	Uro- steges	Infra- labials
78940.....	♀	129	36c	6-7
78941.....	♂	126	39c	7-6
78942.....	juv.	125	36c	x-7
78944.....	♂	129	37c	6-6
78945.....	♂	126	35+	7-7
78946.....	♀	132	35c	7-7
78947.....	♀	128	35c	7-7
78948.....	♀	131	35c	7-7
78949.....	x	125	36c	6-6
78950.....	♂	127	38c	6-6
78951.....	♀	131	35c	6-7
78952.....	♂	126	40c	7-7
78953.....	x	125	37c	6-7
78954.....	♀	129	34c	6-6
78955.....	♂	124	40c	7-7
78956.....	♀	126	33c	6-6
78957.....	x	123	38c	6-6
78958.....	x	124	35c	6-6
78959.....	♂	125	39c	6-6
78960.....	juv.	121	37c	7-7
78961.....	"	126	36c	7-7
78962.....	♂	125	39c	7-7
78963.....	♀	127	35c	6-6
78964.....	♀	123	34c	6-7
78965.....	♀	127	33c	6-6
78966.....	juv.	130	38c	6-7
78967.....	♀	129	35c	6-7
78968.....	♂	127	38c	6-6
78969.....	♂	125	38c	6-6
78970.....	juv.	125	36c	x-7
78971.....	♂	125	40c	6-6
78972.....	♂	125	39c	6-6
78973.....	♀	130	33c	6-6
78974.....	♂	121	39c	6-6
78975.....	♀	125	33c	6-6



No.	Sex	Gastro- steges	Uro- steges	Infra- labials
78976.....	♀	118	28c	6-6
78977.....	♀	130	26c	6-6
78978.....	♂	128	24+	6-6
78979.....	juv.	136	44c	6-6
78980.....	♀	126	34c	6-6
78981.....	x	129	30+	6-6
78982.....	♀	128	34c	6-7
78983.....	♂	142	46c	6-6
78984.....	♂	122	38c	6-6
78985.....	juv.	119	36c	6-6
78986.....	"	126	40c	6-6
78987.....	x	130	34c	7-7
78988.....	♂	123	41c	6-7
78989.....	♂	126	40c	6-6
78990.....	juv.	123	38c	6-6
78991.....	♀	130	34c	6-6
78992.....	♀	125	34c	6-6
78993.....	♀	127	34c	6-6
78994.....	♀	125	33c	6-6
78995.....	♀	126	33c	6-6
78996.....	♀	125	33c	6-6
78997.....	♀	130	38c	6-6
78998.....	x	125	38c	6-6
78999.....	uv.	123	37c	7-7
79000.....	"	127	40c	7-7
79001.....	"	125	38c	7-7
79033.....	"	121	30c	x-x

### Sibon sibon (Linnaeus)

Two specimens were brought in by a native, and the habitat could not be ascertained. The ground color, in life, is grayish, with cross-bands of black bordered by a white line one scale wide. The undersurface of the body is whitish, with minute black spots and alternating black blotches. The undersurface of the tail is black, with white spotting.

Scale rows are as follows:

No.	Sex	Scale Rows	Gastro- steges	Uro- steges	Anal	Supra- labials	Infra- labials	Pre- oculars	Post- oculars	Loreal	Temporals
79002	♂	15	184	89c	1	7-7	8-8	1-1	2-2	abs.	1+2-1+2
79003	♀	15	172	81c	1	7-7	8-9	1-1	2-2	"	1+2-1+3

*Imantodes cenchoa* (Linnaeus)

Probably not an uncommon species in the vicinity of Boquete, but owing to its secretive, nocturnal habits it is somewhat difficult to find. Two specimens were taken from the dense foliage in the coffee trees, one was found crawling along a barbed wire fence at night, and another under a large dead leaf, which had fallen from a tree onto a lawn, while a fifth was found in a bromelia.

In life the ground color is grayish, with large reddish-brown bands extending over the sides and reaching the gastrosteges. Undersurfaces grayish or whitish, with minute brownish spots. C.A.S. Nos. 79004 and 79008 have a reddish longitudinal line down the middle of the gastrosteges.

Scale counts are as follows:

No.	Sex	Scale Rows	Gastrosteges	Urosteges	Anal	Supra-labials	Infra-labials	Pre-oculars	Post-oculars	Loreal	Temporals
79004	♂	17	261	164c	÷	8-8	10-10	1-1	3-3	1-1	2+4-2+3
79005	♂	17	255	117+	÷	8-8	9-10	1-1	3-3	1-1	2+3-2+3
79006	♀	17	243	151+	÷	8-8	10-10	1-1	2-3	1-1	2+3-2+3
79007	♀	17	240	150c	÷	8-8	9-10	1-1	2-2	1-1	2+2-2+2
79008	♀	17	241	170c	÷	8-8	10-10	1-1	3-2	1-1	2+3-2+2

*Oxybelis acuminatus* (Wied)

Three specimens were taken from bushes in open pasture land. Like *Imantodes cenchoa* it is a difficult snake to discover in thick foliage.

In life the ground color is a light reddish-bronze, with occasional minute black spots; a narrow black line passes through the eye and along the upper edge of the labials; undersurface of body anteriorly greenish-yellow, posteriorly brownish; undersurface of tail brownish.

*Erythrolamprus bizonus* Jan

Of the three specimens taken one was found in a rock wall a few feet above the waters of the Caldera River, and two along the banks of a stream above the floor of the Caldera Valley.

The brilliantly red and black banded snake has the black bands in pairs and the red ones heavily marked with black. The bands completely encircle the body and tail. The top of the head and

neck is black, with considerable white edging on the head plates. C.A.S. Nos. 79013 and 79014 have a narrow white collar across the neck.

Scale counts are as follows:

No.	Sex	Scale Rows	Gastro-steges	Uro-steges	Anal	Supra-labials	Infra-labials	Pre-oculars	Post-oculars	Loreal	Temporals
79012	♂	15	193	57c	÷	7-7	9-9	1-1	2-2	1-1	1+2-1+2
79013	♂	15	193	59c	÷	7-7	9-9	1-1	2-2	1-1	1+2-1+2
79014	♂	15	191	58c	÷	7-7	9-9	1-1	2-2	1-1	1+2-1+2

### *Coniophanes fissidens fissidens* (Günther)

Probably not common about Boquete, only two specimens having been taken, one brought in by a native woman and the other found under a stone on the banks of the Caldera River. In life the dorsal coloration of these two snakes was a very light brown, with a pinkish tinge. In alcohol this has changed to a uniform light brown. A white stripe, with a very narrow black border above, extends from the eye to the neck. C.A.S. No. 79105 has a faint trace of a black dorsal line. The undersurfaces are whitish, with minute black spots.

Scale counts are as follows:

No.	Sex	Scale Rows	Gastro-steges	Uro-steges	Anal	Supra-labials	Infra-labials	Pre-oculars	Post-oculars	Loreal	Temporals
79015	♂	21	127	82c	÷	8-8	10-10	1-1	2-2	1-1	1+2-1+2
79016	♂	21	122	71c	÷	8-8	10-10	1-1	2-2	1-1	1+2-1+2

### *Stenorhina degenhardtii* (Berthold)

A single specimen was dug from the ground while clearing land for a garden, and three were found along the banks of a stream above the floor of the Caldera Valley.

All four are of the cross-banded type of coloration. In life the ground color was reddish-brown, with cross bands of black. The

undersurfaces were yellowish heavily spotted with black, with the exception of the throat which is without markings.

Scale counts are as follows:

No.	Sex	Scale Rows	Gastro-steges	Uro-steges	Anal	Supra-labials	Infra-labials	Pre-oculars	Post-oculars	Loreal	Temporals
79017	♀	17	163	38c	÷	7-7	7-7	1-1	2-2	1-x	1+2-1+2
79018	♀	17	156	50c	÷	7-7	7-7	1-1	2-2	abs.	1+2-1+3
79019	juv	17	170	38c	÷	7-7	7-7	1-1	2-2	"	1+2-1+2
79020	"	17	169	34c	÷	7-7	7-7	1-1	2-2	"	1+2-1+2

### *Micrurus nigrocinctus nigrocinctus* (Girard)

Nine specimens, found under stones in pasture lands and on open roads in the vicinity of Boquete, constitute the present series.

Unlike the northern form, *M. n. zunilensis*, from Guatemala, the red bands are heavily pigmented with black and the white bands much more pronounced, being 2-2½ scales in width. Adult males show conspicuous supra-anal keeling.

Scale counts are as follows:

No.	Sex	Scale Rows	Gastro-steges	Uro-steges	Anal	Supra-labials	Infra-labials	Pre-oculars	Post-oculars	Loreal	Temporals
79021	juv	15	x	34c	÷	x-7	7-7	x-1	x-2	abs.	1+1-1+1
79022	♀	15	217	38c	÷	7-7	7-7	1-1	2-2	"	1+1-1+1
79023	♀	15	229	33+	÷	7-7	7-7	1-1	2-2	"	1+1-1+1
79024	♂	15	x	51c	÷	7-7	7-7	1-1	2-2	"	1+1-1+1
79025	juv	15	225	35c	÷	7-7	7-7	1-1	2-2	"	1+1-1+1
79026	"	15	212	51c	÷	7-7	7-7	1-1	2-2	"	1+1-1+1
79027	♀	15	217	39c	÷	7-7	7-7	1-1	2-2	"	1+1-1+1
79028	♂	15	197	46c	÷	7-7	7-7	1-1	2-2	"	1+1-1+1
79029	♂	15	208	52c	÷	7-7	7-7	1-1	2-2	"	1+1-1+1

**Trimeresurus lateralis** (Peters)

One of the rare snakes about Boquete. Three individuals were seen, but only two collected, the third escaped in the swift waters of the Caldera River as it dropped into the rushing torrent from an overhanging limb. Of the two taken one was found in the heavy foliage along the river, and one in a coffee tree about a thousand feet above. In life the ground color is uniform green, a somewhat lighter shade underneath. A narrow yellow line extends along the outer row of scales, engaging the tips of the gastrosteges.

Scale counts are as follows:

No.	Sex	Scale Rows	Gastrosteges	Urosteges	Anal	Supralabials	Infra-labials	Pre-oculars	Post-oculars	Loreal
79030	♂	21	169	56c	1	9-8	12-12	2-2	3-3	1-1
79031	♀	23	166	55c	1	10-10	12-12	2-2	3-3	1-1

## PLATE 39

Fig. 1. Trail in the vicinity north of Boquete, Panama. The type of *Hydromorphus dunni* was taken at the base of the Yucca-like plant at the right-hand side. This locality is also the habitat of *Ninia psephota*, *Dendrophidion paucicarinatus*, *Geophis brachycephala*, and *Stenorhina degenhardtii*.

Fig. 2. Top of head *Hydromorphus dunni*.

Fig. 3. Side view of anal region *Hydromorphus dunni*.

## PLATE 40

Fig. 1. A road in the Caldera Valley north of Boquete. Along this road were taken *Anolis copei*, *Anolis polylepsis*, *Ameiva quadrilineata*, *Ninia maculata*, *Dryadophis boddaertii alternatus*, *Leimadophis taeniurus juvenalis*, *Imantodes cenchoa*, and *Micrurus nigrocinctus nigrocinctus*.

Fig. 2. Vegetation on the north slope of the Volcan Chiriqui at about 7,000 feet. *Anolis pachypus* and *Anolis microtus* occur at this point.

## PLATE 41

Fig. 1. Coffee trees on an island in the Caldera River. In these trees were found *Anolis intermedius*, *Drymarchon corais melanurus*, and *Imantodes cenchoa*. *Mabuya mabuya mabuya* was found on the stump at the left of the picture.

Fig. 2. The Caldera River about two miles above Boquete. *Trimeresurus lateralis* was found on the bank of the river opposite the large rock in the center. It was a common sight to see *Basiliscus basiliscus* sitting on the tops of rocks such as this, and on the smaller ones adjacent to it.

## PLATE 42

Fig. 1. The crater of the Volcan Chiriqui 10,000 feet above sea-level. *Gerrhonotus monticola* was found in the patches of grass scattered on the crater floor.

Fig. 2. The Caldera River just to the northward of Boquete. The habitat of *Leptohis occidentalis occidentalis*, *Erythrolamprus bizonus*, and *Spilotes pullatus pullatus*. A large male *Spilotes* was shot from the dead limb seen in the center of the picture.



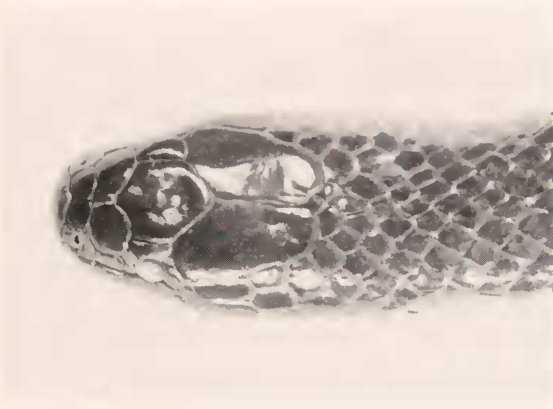


Fig. 2



Fig. 3



Fig. 1

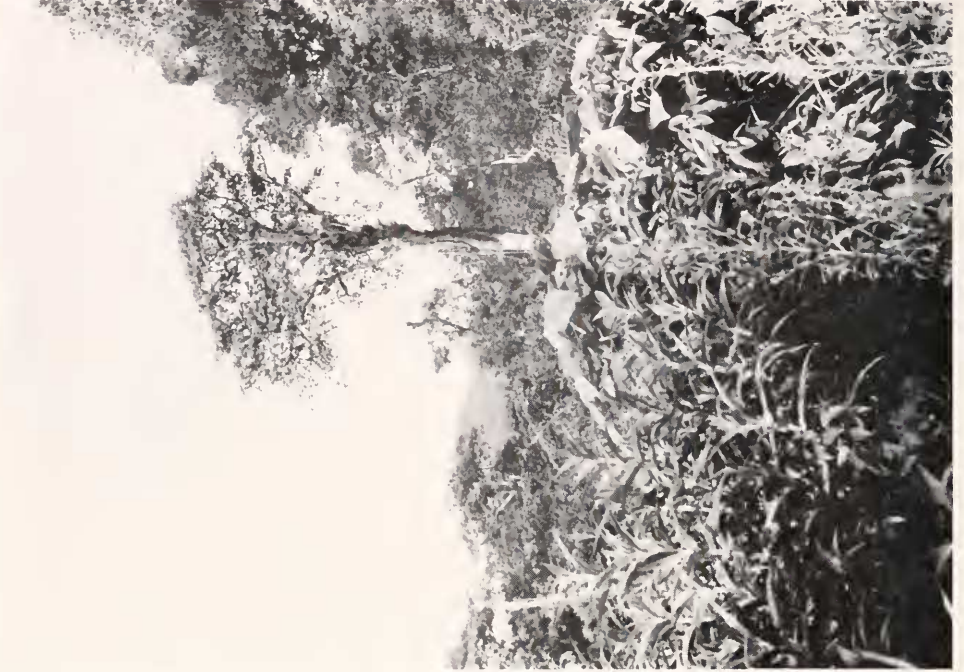


Fig. 2



Fig. 1





Fig. 1



Fig. 2



Fig. 1



Fig. 2